MITIGATION OPPORTUNITIES, RECOMMENDATIONS, AND IMPLEMENTATION

Under the four planning goals, each objective is listed with one or more specific implementation methods, a priority classification, targeted completion date, potential funding source(s) if needed, explanatory text descriptions, current status description, descriptions of benefit-cost considerations (including technical feasibility and environmental soundness), and a reference or description of the item's relevance to a full range of hazards (including technological and human-related hazards).

The current implementation status ("2014 status") of each objective from the 2011 plan edition can be found in the "Comments" section under each objective, including an explanation of any delays or implementation problems.

Objectives from the previous 2011 plan that have been completed or removed (in their entirety) from further consideration (due to non-feasibility, consolidation or other reasons) have been transferred to the tables titled "Compendium of Addressed/Removed Objectives" at the end of this section.

To help keep retain continuity between this updated plan and the previous edition, and to assist in the tracking of implementation progress over time, Mitigation Objectives that have been completed or removed from consideration still appear here, but with strikethroughs to denote elements that are no longer considered current. The referenced Compendium table toward the end of this section then summarizes of all those objectives that have been completed or removed. Benefit-cost review text is provided for every objective, to explain why a net benefit would be expected if sufficient resources, staff time, interagency coordination, political priorities, etc. are sufficiently available to allow the objective's implementation. There are cases in which an objective has been removed due to a lack of these things, even though an explanation is provided about why the activity could result in a net benefit. In these instances, the "2014 status" text provides the most important reason(s) for the objective's current implementation status.

The list of currently active, prioritized objectives for the time period 2015-2024 is summarized in the corresponding table entitled "Summary of Target Completion Dates for Plan Objectives," at the very end of this section.

Goal 1

Promote Life Safety: Minimize disaster-related injuries and loss of life through public education, hazard analysis, and early warning.

Objective 1.1: Increase public / private sector awareness of hazard related dangers and mitigation solutions.
Implementation Method:

- State agencies will distribute information about hazard mitigation through training sessions, the internet, professional networks, and other readily available means.
- ~~Conduct a statewide mitigation marketing and public education campaign targeted at seven key professional groups.~~
- ~~Produce and distribute a CD with discipline-specific hazard mitigation information and recommendations / best practices.~~
- ~~Conduct introductory training (on the CD contents) for each target group as needed / appropriate.~~

Committee Priority: HIGH (ongoing)
Completion Target: 2016
Funding: HMA
Comments: An HMGP project under Federal Disaster 1346 (Statewide Mitigation Marketing and Public Education) had allowed the development of a notification "postcard" development (Phase I) with contracted assistance provided by Zimmerfish Associates (a Lansing-based public relations and advertising firm). Phase II had involved the development, by state employees, of mitigation educational materials specific to seven targeted professional groups, for distribution on CD-ROM. 2014 status: Instead of proceeding with the original marketing vision, staff has found it more efficient to develop and update existing guidance documents for the widest available distribution through internet web sites. This transformed objective can therefore be considered an ongoing activity.

BC REVIEW: Many casualties occur only because people were unaware of the actual risks present in hazards such as lightning, severe winds, industrial accidents, floods, hazardous materials incidents, public health emergencies, or wildfires. By building awareness through the provision of instructional materials and partnerships with other agencies (governmental, media, educational) at the local, state, and federal level, casualties are certainly prevented, for costs that are far less than most other projects. For example, the web posting of a booklet involves negligible marginal costs and therefore may pay off it its reading prevents even a single life from being lost. For example, the mere awareness of actual risks from lightning for persons outdoors may save lives.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item is relevant for all hazards.

Objective 1.2: Encourage and promote multi-hazard emergency plans in all public and private institutions, to include provisions for mitigating applicable hazards.
Implementation Method:

- Provide planning guidance, technical assistance, and continuous follow-up to applicable facilities, as required.

Committee Priority: HIGH (ongoing)
Completion Target: 2016
Funding: State Funding (General Fund), HMA, EMAP, etc.
BC REVIEW: Federal funding has been used for the development and maintenance of these plans, in accordance with the relevant regulations. Plan development is not evaluated for a cost-benefit ratio in the way that physical projects are (although federal funding for physical hazard mitigation projects requires FEMA-approved state and local plans to be in place, and the development of emergency response plans is an ongoing activity associated with the Emergency Management Performance Grant at both the state and local level). In view of the enormous potential impacts of hazards such as transportation accidents, terrorism, wildfires, and infrastructure failures, it clearly makes sense to have coordinated planning efforts taking place throughout the state. Such plans also help to justify budgets and priorities established for grant fund use. The planning process requires the involvement of multiple agencies and thus encourages these other agencies to contribute their efforts and resources toward at least some of the goals, activities, and projects identified by the plans. It has been reported by some local emergency management programs in Michigan that the benefits realized from multi-agency coordination, by themselves, were already considered to justify the local planning efforts, even before the plan had been completed.
Comments: 2014 status: The MCCERCC Hazard Mitigation Committee decided to re-classify this from low to high priority. Michigan schools are now required by 1999 PA 102 to plan for incidents of violence and other hazardous situations. Virtually all state owned facilities have an emergency plan in place that addresses a wide range of hazards. Community and site planning for hazardous materials are ongoing activities and one of the main missions of MCCERCC. These are ongoing activities that will be continued and supported by state staff, within resource limitations. State agencies also provide training to many persons in these subjects.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item is clearly relevant for all hazards.

Objective 1.3: Promote local early warning systems and capability.
Implementation Method:

- ~~Develop state recommended standards / best practices for early warning systems and capability – to include such factors as population coverage, specialized needs for critical facilities, etc.~~
- ~~With the assistance of local emergency management programs, conduct a comprehensive study of early warning coverage throughout the state to determine needs, gaps and shortfalls.~~
- Use information from local hazard mitigation plans to assess gaps in warning system coverage.
- Assist with funding warning systems and warning sirens in local jurisdictions, through the administration of FEMA Hazard Mitigation Assistance grant funds.

Committee Priority: MEDIUM
Completion Target: 2019
Funding: EMPG, HMA, HSGP
BC REVIEW: The great value of human life and health, and the relatively low cost by which many warning systems can alert large numbers of persons about hazardous events and conditions, warrant continued emphasis as a very cost-effective way of preventing casualties from all types of large-scale hazards. Michigan has been involved in the administration of federal funds that have been directed toward warning systems, with local emergency management programs themselves proposing the specific locations for sirens, and areas needing coverage by new warning systems. The selection process for these proposed warning systems involves an explicit comparison between the costs of each

outdoor siren and the number of persons living in the proposed siren's coverage area. Other types of warning systems, such as the provision of NOAA weather radios to facilities (including equipment that had been specially adapted to serve the hearing-impaired), the installation of radio relay towers, have also been funded. This is done in accordance with FEMA benefit-cost standards, typically through the use of "5%" State discretionary funds under HMA.
Comments: 2014 status: The MCCERCC Hazard Mitigation Committee decided to re-classify this from low to medium priority, reflecting the fact that many sirens have been funded by EMHSD through the use of federal funds available for the purpose. At certain times, the frequency of that activity would have qualified this action for high priority status, but the funds available for this activity have been quite limited in recent years. This objective was scaled back to reflect actual resources projected to be available. The State endorses the nationally-recognized Emergency Management Accreditation Program (EMAP) standards for early warning systems and capability as part of its ongoing local emergency management and hazard mitigation planning efforts. Federal mitigation grant funding will be provided, where available and appropriate, for future early warning capability enhancement projects, but this may only mean a small fraction of the mitigation funds available after a declared disaster.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item is relevant for multiple hazards.

Objective 1.4: Promote the concept of "safe rooms" within homes, businesses, and local/state governmental facilities to prevent and minimize injury and loss of life in tornadoes and severe winds.
Implementation Method:
- Print and make available FEMA's "safe room" construction plans; also permanently post the plans on the MSP/EMHSD web page.
- Work with the Michigan Committee on Severe Weather Awareness to promote safe rooms as a viable option for severe storms protection.
- As circumstances allow, develop prototype "safe rooms" within public buildings to serve as demonstration projects.
- Develop new (or enhance existing) safe space public information materials for mobile home residents.

Committee Priority: MEDIUM
Completion Target: 2019
Funding: HMA, EMPG
Comments: 2014 status: The MCCERCC Hazard Mitigation Committee decided to re-classify this from high to medium priority. Safe room demonstration project funded at Michigan State University Day Care Center under HMGP for Federal Disaster 1346. (This project, which includes eight safe rooms, was completed during 2002.) Bullet 1 – This documentation is available in hardcopy from MSP/EMHSD, and on a FEMA web site, referenced by the MSP/EMHSD web site. Bullet 2 – This is an ongoing effort. Bullet 3 – A safe room demonstration project was funded at the Grand Traverse Band of Ottawa and Chippewa Indians Reservation in Antrim, Benzie and Charlevoix Counties. Consisting of six safe rooms, it was completed in August, 2008. Bullet 4 – This is an ongoing effort.
BC REVIEW: Certain safe room projects have been shown to be cost-effective life-protective measures even when calculations have been focused exclusively on severe wind events. Safe rooms are potentially useful for other types of hazards for which sheltering may be useful, which might increase the cost-effectiveness of this strategy. (Technological and human-related hazard events that may result in a need for "sheltering in place," such as terrorism, nuclear attack, nuclear power plant accidents, or hazardous materials incidents; or for social distancing in response to public health emergencies or bioterrorism.) Each safe room location proposed for grant funding is considered on a case-by-case basis, using a FEMA-established quantitative assessment. (Additional safe room projects may be privately implemented, without the use of grant funds, by business and residential owners who have independently decided that the projects are useful.)
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: Yes – winds plus technological/human hazards
The concept of a fallout shelter now dates back many decades, although such shelters have historically seen much more use as tornado and storm shelters. An increased concern with terrorism could again bring new emphasis to all the sheltering functions that safe rooms might serve.

Objective 1.5: Support and utilize a system of real-time rainfall and river flow gages throughout Michigan as part of an overall flood warning system.
Implementation Method:
- Support for multi-agency system of stream gauges and inter-gauge interpolation for local, state and federal users.

- Incorporate stream gauge system and data into State hazard analysis and resource protection activities.
- Encourage local and regional agencies to consider or make use of stream gauge data in their own activities.

Committee Priority: MEDIUM
Completion Target: 2019
Funding: Federal Funding (current effort led by U.S. Geological Survey; partnering agencies in Michigan)
Comments: Several state agencies supported a U.S. Geological Survey grant proposal to obtain funds for inter-gauge interpolation of stream gauge data during 2013. The "StreamStats" system would provide this information to local, regional, state, and federal agencies. Stream gauges are in place on many rivers throughout the state, but conditions between the gauges must be interpolated, to make the gauges maximally effective. 2014 status: This objective was substantially changed from the 2011 plan, to reflect recent activities involving government agencies, and although the committee re-classified it from LOW to HIGH priority, a subsequent lowering to MEDIUM was considered more appropriate when an update from USGS revealed that obstacles to the funding process had appeared.
BC REVIEW: Many gauges are already in place throughout Michigan as part of a real-time monitoring system (see the WaterWatch web site at http://waterwatch.usgs.gov), but the gauge locations do not cover all known floodplain and at-risk areas. Although an expansion of the gauge locations does seem to be cost-effective within floodplain areas that contain development, the capacity to use computers to interpolate stream conditions between these gauges would provide extra information for many areas throughout the state, at a reduced cost. Although designed for flood mitigation, these gauges also proved useful in the 2010 Enbridge pipeline break disaster, in which a large amount of fuel was accidentally released into the Tallmadge Creek and Kalamazoo River. Immediate access to water level measurements provided useful information for emergency responders, technicians, and engineers.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This particular item focuses directly upon natural (hydrological) hazards, although flood-related preparedness and response can also relate to the prevention of damages and impact that result in secondary hazards (from infrastructure failure, transportation accidents, hazardous materials incidents, etc.)

Objective 1.6: Develop comprehensive hazard analyses / risk assessments (as part of a hazard mitigation plan development process) in all local emergency management program jurisdictions to address all pertinent natural, technological and human-related hazards.

Implementation Method:
- Multi-year hazard analysis development process initiated in FY 2000 and is implemented by municipal and county governments and their partnering agencies, making use of local grant agreements (annual work plans for EMPG-funded emergency management programs) and dedicated hazard mitigation planning staff in MSP/EMHSD.
- Create hazard area data sets using the locally compiled and reported hazard data.
- Overlay the hazard area data on the critical facilities inventory and relevant population data to identify and further define and quantify risk and vulnerabilities.

Committee Priority: HIGH/ONGOING
Completion Target: 2016
Funding: EMPG, HMA
Comments: Local emergency management program jurisdictions (and their partnering agencies) use printed guidance materials, plus input and training opportunities, to develop a detailed hazard analysis as part of their local hazard mitigation plan development process. Local hazard data can be compiled by the MSP/EMHSD in detail over time, but in general form has already been taken into account during updates of the Michigan Hazard Analysis and Michigan Hazard Mitigation Plan. Some of this information is used at the state and local levels to develop and select hazard mitigation projects and to make more informed hazard mitigation decisions. 2014 status: This objective is still valid and remains an ongoing activity for MSP/EMHSD. It ties in with other assessment processes overseen by different branches of government, such as the flood map updates performed in coordination with MDNR. Bullets 2 and 3 are medium-term activities that rely upon accumulated information readily usable in Geographic Information Systems.
BC REVIEW: Federal funding has subsidized the development of local hazard analyses and mitigation plans in about 100 local Michigan EM programs. Since plans assist with quality hazard mitigation project selection, and the tens of millions of dollars so far spent on hazard mitigation has been estimated to save about 3 times as much in long-term reductions in emergency response costs, property damage, environmental impacts, loss of life, and economic/business impacts, it has been deemed worthwhile to include the costs of planning as part of that calculation.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item addresses all types of hazards.

Goal 2

Reduce Property Damage: Incorporate hazard mitigation considerations into land use planning / management, land development processes, and disaster resistant structures.

Objective 2.1: Increase knowledge of urban/regional planners and emergency managers about sound land use and development practices that can help reduce long-term hazard risks and vulnerabilities.

Implementation Method:

- Partner with accreditation organizations for undergraduate and graduate city, urban, and regional planning programs at Michigan colleges and universities, to encourage integration of hazard mitigation principles and practices into comprehensive planning courses, and/or the development of a course (or courses) that discuss same.
- Partner with the American Institute of Certified Planners (AICP) and the American Planning Association to include questions pertaining to hazard mitigation on the exam for AICP certification.

Committee Priority: HIGH (Ongoing)
Completion Target: 2016
Funding: EMPG
Comments: 2014 status: The priority of this item was changed from Medium to High. A Hazard Mitigation / Comprehensive Plan Interface course is included in MSP/EMHSD PEM training requirements, and the course is consistently offered as part of the MSP/EMHSD training curriculum. In addition, hazard mitigation training sessions and presentations have been offered to planning and urban studies students at Wayne State University, Michigan State University and the University of Michigan at various times since 2001. These sessions and presentations continue to be offered as requested. In recent years, awareness and outreach has been greatest at Michigan State University, due primarily to the convenience of its location and the great overlap between State government and university social networks. Other educational institutions are hereby encouraged to inquire about having a guest speaker from EMHSD on the topics of hazard awareness, hazard vulnerabilities, and hazard mitigation activities. Outreach to additional Michigan universities and colleges will occur in the next couple of years (high priority). More widespread presentations have occurred at conferences around the state.
Information on the FEMA Mitigation Management Series training courses has been included in recent MSP/EMHSD Training Catalogs. Planning guidance is provided online and in MSP/EMHSD Publication 207a—"Hazard Mitigation Planning Handbook," which is scheduled for update in the next year (high priority). This document has been widely distributed to the planning community and to other professional disciplines involved in hazard mitigation and/or land use planning in Michigan.
BC REVIEW: The costs of guidance activities are being minimized through the use of internet resources. Guidance documents can be readily accessed from federal and state agency web sites, and their use is encouraged during correspondence, courses, and presentations. Selected speakers promote this objective through sessions at already-established conferences. Since these conferences are already held periodically, costs are not great to simply add or fill one of the sessions with a speaker on the subject. The publication of articles and letters in planning magazines and newsletters (or editorial postings on web pages and associated web logs) is also considered to be a very cost-effective means of reaching a large number of professionals. The costs of such activities would easily be justified if hazard awareness allows even just a few extra lives to be saved.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item is relevant for all types of hazards, and the urban and regional planning profession has traditionally sought to foresee and address such issues as infrastructure failures, transportation accidents, and potentially conflicting land uses (e.g. the segregation of industrial hazardous materials handling from schools and residential areas). Michigan's guidance documents and plans seek to expand planners' awareness of additional types of spatial and systemic interactions, such as the potential impact of hazards upon critical facilities, special populations, and other emergency management concerns (such as the capacity for evacuation and other emergency response actions within a vulnerable area).

Objective 2.2: Further define identified flood vulnerabilities in state owned/operated critical facilities.
Implementation Method:

- Conduct detailed follow-up studies of vulnerable state owned/operated critical facilities to help to determine the types of "brick and mortar" projects that would be required to permanently reduce identified facility vulnerabilities to flooding.
- Follow up with the Michigan Department of Technology, Management and Budget (MDTMB) regarding the implementation of study recommendations in affected facilities (as time, circumstances, and resources permit).

Committee Priority: MEDIUM
Completion Target: 2019 (Phased Implementation)
Funding: HMA, FEMA HMTAP, RiskMap, USGS, etc.
Comments: 2014 status: The priority of this objective was raised from Low to Medium. The Michigan Hazard Mitigation Plan itself provides a mechanism for accomplishing this task, although for homeland security purposes, the detailed list of critical facilities is suppressed in the public version of this document (Attachment A). More extensive analysis using Geographic Information Systems is anticipated to follow within the next 5 years or so. A detailed study of vulnerable state owned/operated critical facilities would help to determine the types of "brick and mortar" projects that would be required to permanently reduce any identified facility vulnerabilities to flooding. However, such a study may involve multiple agencies, or extra staff support through a FEMA HMTAP contract. Additional (flood) Map Modernization activities continue to occur in Michigan Counties. The ready availability of digitized floodplain information across Michigan will thus enable the quality of flood analysis to improve with subsequent editions of the MHMP. However, staff time (or HMTAP support) will need to be identified to make full use of available resources in producing a detailed analysis, and further dFIRM progress is still being awaited.
BC REVIEW: Specialized Geographic Information System resources will be the tool that makes this kind of research feasible. As digital flood information becomes available from the remaining Map Modernization projects in Michigan, it can be compared with other digital geo-data. The result can take the form of detailed maps that estimate flood risks throughout the state's diverse facility locations. Updated lists of critical facilities have recently been obtained for this 2014 plan update, and consolidated digital flood maps should be available for comparison over the next several years. A detailed assessment will still involve considerable staff time, but multiple agencies have taken this GIS approach to the subject, and large portions of the work might therefore be accomplished more quickly than a single agency could handle the task. A complete "layer" of floodplain areas throughout the state, "overlaid" with a complete layer of critical facility locations, would provide an ideal starting point, followed by further considerations of local topography and "first floor elevations" for facilities that may be at-risk. As with planning activities, the expected benefits of hazard mitigation activities that are informed by an analysis of risks would be expected to exceed the costs of that research.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item is specific to the flood hazard, although some of the critical facilities in question involve other types of emergency concerns, such as public health, energy emergencies, transportation accidents, and infrastructure failure. Moreover, some of the topographic and hydrological analyses can be useful for hazards such as pipeline breaks, chemical spills, or water contamination.

Objective 2.3: Identify critical floodplain storage areas within the state and enter the data into appropriate Geographic Information Systems to enhance future land use planning and development decision making.
Implementation Method:

- Conduct a study of critical floodplain storage areas and digitize the results.
- Make the results available to all appropriate land use planning and regulatory agencies in the state.

Committee Priority: LOW
Completion Target: 2024 (Phased Implementation)
Funding: HMA, CAP, FEMA HMTAP, State Funding (General Fund)
Comments: Such a study would follow Objective 2.2 and therefore take extra time to implement. Previous plans had referenced the use of FEMA HMTAP, but such assistance was not used for this objective. Completion of digital flood mapping first needs to occur. 2014 status: This objective is still valid for future implementation. However, implementation is contingent upon further digitization of FIRM information.
BC REVIEW: Further development of digital geographic data sets may be needed on the part of specialized geologic or hydrologic agencies to make the costs (mostly staff time for data preparation and processing) lighter. With further

progress on that task, and confirmation that modeling capabilities are sufficiently valid, greater certainty about the cost-effectiveness of this objective would result.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item is focused upon flood prevention, but may alleviate secondary flood impacts that involve other types of hazards.

Objective 2.4: Acquire/remove or relocate all residential and commercial structures currently occupying floodways of Michigan rivers and streams.
Implementation Method:
- Identify structures in floodways.
- Acquire / relocate at-risk structures.

Committee Priority: HIGH
Completion Target: 2016
Funding: HMA
Comments: 2014 status: Being addressed by ongoing Hazard Mitigation Assistance projects. The current pilot community (Village of Estral Beach, Monroe County) is a residential elevation project only; however, flood damage risk has been substantially reduced in the Village by the elevation actions. Previous work had included acquisition projects in Robinson Township (Ottawa County). The acquisition and relocation of structures occupying floodways (and floodplains) of Michigan rivers and streams remains a top-priority mitigation activity that is consistently identified for funding consideration under the various HMA program funding cycles.
BC REVIEW: The evaluation of this objective is typically assessed on a case-by-case basis, and the assent of private property owners is essential. In the case of grant-funded projects, a specific benefit-cost analysis calculation is required by FEMA to demonstrate the cost effectiveness at each proposed project site. Thus, those specific projects to be funded with federal matching grants will have had their cost-effectiveness verified.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item focuses on flood hazards.

Objective 2.5: Acquire/remove, relocate, or elevate the worst NFIP repetitive-loss structures in Michigan.
Implementation Method:
- Identify NFIP repetitive loss structures.
- Acquire / relocate or elevate repetitive loss structures.

Committee Priority: HIGH
Completion Target: 2016
Funding: HMA
Comments:
2014 status: (Refer to the update narrative for Objective 2.4.) The acquisition and relocation of repetitive loss structures in Michigan remains a top priority mitigation activity under this plan. The list of repetitive loss properties in Michigan has been substantially reduced in recent years. The current pilot community (Village of Estral Beach, Monroe County) is an ongoing residential elevation project, and further progress will similarly flow from flood mitigation projects using HMA funds.
BC REVIEW: The evaluation of this objective is typically assessed on a case-by-case basis, and the assent of private property owners is essential. In the case of grant-funded projects, a specific benefit-cost analysis calculation is required by FEMA to demonstrate the cost effectiveness at each proposed project site. Thus, those specific projects to be funded with federal matching grants will have had their cost-effectiveness verified.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item focuses on flood hazards, although some repetitive loss properties may involve businesses that handle hazardous materials (or provide valuable community services), and thus help to prevent secondary harm from technological hazards.

Objective 2.6: Establish and sustain as many FIREWISE communities, statewide, as possible.
Implementation Method:
- The MDNR will continue to identify communities that are appropriate for FIREWISE designation due to their wildfire risk/vulnerability and local willingness to establish and sustain the program.
- As MDNR staff resources allow, work with the identified communities to focus local activities to meet the FIREWISE program requirements as established by the National Fire Protection Association.
- Provide technical assistance to participating communities in obtaining and maintaining program certification.

- Formally recognize outstanding examples of FIREWISE community participation as a "best practice" for other Michigan communities to emulate.
- Expand wildfire mitigation to include related efforts, such as the "fire adapted communities" standard, referenced in the new guidance document available at http://www.fs.fed.us/openspace/fote/reports/GTR-299.pdf.

Committee Priority: HIGH
Completion Target: 2016
Funding: HMA, EMPG, State Funding (General Fund)
Comments: 2014 status: The MHMCC and MDNR Forest Management Division began a joint effort to establish pilot "FIREWISE" communities in Michigan in 2001, and to expand the "FIREWISE" program statewide. A state "FIREWISE" Conference was held in December 2001. A statewide fire threat assessment project was partially funded under the HMGP for Federal Disaster 1346. This phase was completed and 1346 disaster funds have been closed out. Bullet 1 is an ongoing process for the MDNR. Future wildfire mitigation efforts will focus on creating new, formally recognized FIREWISE communities. Bullet 2 had involved the completion of the "Wildfire Prevention in Southern Michigan Project" under Federal Disaster 1346-DR-MI. Future such projects covering other areas of the state will be considered as time, resources and circumstances permit.
BC REVIEW: This strategy would encourage "Firewise" community preparedness and wildfire mitigation activities. Since it need not add heavy administrative or staffing requirements, and would be adopted by communities that have substantial wildfire risks, its guidance and coordination efforts toward wildfire preparedness, mitigation, and management is considered to be clearly cost-beneficial for these communities, in light of the substantial wildfire costs they have endured.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item addresses the wildfire hazard, which can also help to protect against the failure of critical facilities and infrastructure which may be located in the wildfire risk area.

Objective 2.7: Promote and assist with flood mitigation projects in all vulnerable areas, statewide.
Implementation Method:

- The MDEQ will continue their flood mapping coordination work, dam safety programs, NFIP outreach, and other activities to alleviate general flood risks (beyond the specific floodway and repetitive loss sites identified in Objectives 2.4 and 2.5).
- MSP/EMHSD will continue to provide technical assistance with, and promotion of, hazard mitigation planning that identifies potential at-risk sites for flood mitigation activities.
- MSP/EMHSD will continue to administer grant programs that allow federally subsidized flood mitigation activities to occur.
- Develop ways to evaluate flood damage to and caused by the failure of sewage handling systems.

Committee Priority: HIGH
Completion Target: 2016
Funding: HMA, EMPG, State Funding (General Fund)
Comments: 2014 status: This is a new objective, added to the 2014 plan in order to more broadly address flood mitigation activities beyond the more narrowly defined locations already listed under Objectives 2.4 and 2.5.
BC REVIEW: The evaluation of flood mitigation projects are typically assessed on a case-by-case basis, and the assent of private property owners is essential. In the case of grant-funded projects, a specific benefit-cost analysis calculation is required by FEMA to demonstrate the cost effectiveness at each proposed project site. Thus, those specific projects to be funded with federal matching grants will have had their cost-effectiveness verified. Hazard mitigation planning has long been considered to be cost-beneficial in order to identify and prioritize viable flood mitigation projects, and therefore is a federal requirement for the allocation of grant funds to specific projects. The final bullet point has been added here as a replacement for Objective 4.6.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item focuses on flood hazards, although the benefits may include reductions in infrastructure failures, hazardous material incidents, transportation accidents, and other flood-associated hazards.

Objective 2.8: Promote and assist with flood mitigation projects in all vulnerable areas, statewide.
Implementation Method:

- The MDEQ will continue their flood mapping coordination work, dam safety programs, NFIP outreach, and other activities to alleviate general flood risks (beyond the specific floodway and repetitive loss sites identified in Objectives 2.4 and 2.5).
- MSP/EMHSD will continue to provide technical assistance with, and promotion of, hazard mitigation planning that identifies potential at-risk sites for flood mitigation activities.
- MSP/EMHSD will continue to administer grant programs that allow federally subsidized flood mitigation activities to occur.

Committee Priority: HIGH
Completion Target: 2016
Funding: HMA, EMPG, State Funding (General Fund)
Comments: 2014 status: This is a new objective, added to the 2014 plan in order to more broadly address flood mitigation activities beyond the more narrowly defined locations already listed under Objectives 2.4 and 2.5.
BC REVIEW: The evaluation of flood mitigation projects are typically assessed on a case-by-case basis, and the assent of private property owners is essential. In the case of grant-funded projects, a specific benefit-cost analysis calculation is required by FEMA to demonstrate the cost effectiveness at each proposed project site. Thus, those specific projects to be funded with federal matching grants will have had their cost-effectiveness verified. Hazard mitigation planning has long been considered to be cost-beneficial in order to identify and prioritize viable flood mitigation projects, and therefore is a federal requirement for the allocation of grant funds to specific projects.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item focuses on flood hazards, although the benefits may include reductions in infrastructure failures, hazardous material incidents, transportation accidents, and other flood-associated hazards.

Objective 2.9: Identify and fund appropriate mitigation measures for vulnerable public and private facilities and infrastructure.
Implementation Method:
- Continue to identify, solicit, fund and implement cost-effective, environmentally sound, and technically feasible mitigation projects under the HMA, EMPG and other pertinent programs.
- Per Objective 1.3, fund early warning systems under the HMGP 5% state discretionary set-aside provision and other pertinent programs.
- Per Objective 1.4, fund "safe rooms" within vulnerable public and private structures.
- Per Objective 2.2, further define identified flood vulnerabilities in state owned/operated critical facilities.
- Per Objective 2.4, acquire/remove or relocate all residential and commercial structures currently occupying the floodways of Michigan rivers and streams.
- Per Objective 2.5, acquire/remove, relocate, or elevate the worst NFIP repetitive-loss structures in the state.

Committee Priority: HIGH
Completion Target: 2016
Funding: HMA, EMPG, State Funding (General Fund), Private Funding (Partners TBD), FEMA HMTAP.
Comments: 2014 status: The objective that had previously been referred to under goal 4 is now listed under Goal 2, instead. This change involves the objective's new emphasis upon property protection rather than just agency coordination. Refer to the specific objectives referenced for more details related to each action item. The State of Michigan has funded, or is currently funding, structural and/or non-structural measures under each of the objectives listed in the "Implementation Method" descriptions. The recent advances in the development of many local hazard mitigation plans throughout the state should enable a more efficient process to be used to identify such vulnerabilities for potential funding, but this still requires considerable staff time at MSP/EMHSD. Since 2011, excellent progress has been made in the assembly and creation of digital critical facilities data, for Geographic Information System processing.
BC REVIEW: Although limited federal funds are available for hazard mitigation projects at any given time, such grant funds are only given to subsidize projects that have passed a formal, FEMA-mandated benefit-cost review, thus ensuring that such expenditures are considered to be cost-effective, on a case by case basis.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: The general concept of hazard mitigation should be interpreted as including the consideration and alleviation of a full range of natural, technological, and human-related hazards.

Objective 2.10: Promote and assist with severe wind mitigation projects statewide.
Implementation Method:
- Since tornadoes and severe winds are very damaging events in Michigan, scan local plans for hazard mitigation projects to support with technical assistance and/or federal hazard mitigation funds (if applicable).

Committee Priority: HIGH
Completion Target: 2016
Funding: HMA, EMPG
Comments: 2014 status: This is a new objective, added to the 2014 plan in order to more address a greater variety of hazard mitigation activities beyond flooding.
BC REVIEW: The evaluation of wind mitigation projects must be assessed on a case-by-case basis, because there is not an extensive history of funding for such projects. Yet, the damages from this hazard are extensive, and therefore new ways to prevent or mitigate its impacts need to be explored. It would not be cost-effective to neglect to make such an effort.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item focuses on wind hazards, although the benefits may include reductions in infrastructure failures, transportation accidents, and other hazards.

Objective 2.11: Promote and assist with winter weather mitigation projects statewide.
Implementation Method:
- Since severe winter weather is very damaging in Michigan, scan local plans for hazard mitigation projects to support with technical assistance and/or federal hazard mitigation funds (if applicable).

Committee Priority: HIGH
Completion Target: 2016
Funding: HMA, EMPG
Comments: 2014 status: This is a new objective, added to the 2014 plan in order to more address a greater variety of hazard mitigation activities beyond flooding.
BC REVIEW: The evaluation of winter weather mitigation projects must be assessed on a case-by-case basis, because there is not an extensive history of funding for such projects. Yet, the damages from this hazard are extensive, and therefore new ways to prevent or mitigate its impacts need to be explored. It would not be cost-effective to neglect to make such an effort.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item focuses on winter hazards, although the benefits may include reductions in infrastructure failures, transportation accidents, and other hazards.

Objective 2.12: Promote and assist with wildfire mitigation projects statewide.
Implementation Method:
- Since wildfires can be very damaging in large areas of Michigan, scan local plans for hazard mitigation projects to support with technical assistance and/or federal hazard mitigation funds (if applicable).

Committee Priority: HIGH
Completion Target: 2016
Funding: HMA, EMPG
Comments: 2014 status: This is a new objective, added to the 2014 plan in order to more address a greater variety of hazard mitigation activities beyond flooding.
BC REVIEW: The evaluation of wildfire mitigation projects must be assessed on a case-by-case basis, because there is not an extensive history of funding for such projects. Yet, the damages from this hazard have been extensive, and therefore new ways to prevent or mitigate its impacts need to be explored. It would not be cost-effective to neglect to make such an effort.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item focuses specifically on wildfire hazards.

Goal 3

Build Alliances: Forge partnerships with other public safety agencies and organizations to enhance and improve the safety and well being of all Michigan communities.

Objective 3.1: Promote urban forestry and vegetation management programs and initiatives to develop more resilient woodlands, streetscapes, and landscapes in communities throughout Michigan.

Implementation Method:

- Coordination and technical support to local urban forestry programs (distributing guidance on developing and/or enhancing an urban forestry program, including expected benefits/costs of operating such a program).
- Conduct periodic educational programs on creating and maintaining a storm-resistant urban forest, targeted at urban forestry programs and local public works agencies.

Comittee Priority: HIGH

Completion Target: 2016

Funding: EMPG, HMA, State Funding (General Fund), Private Funding

Comments: 2014 status: The wording of this objective had been revised by the MCCERCC hazard mitigation committee, and the objective's priority has been raised to HIGH, to better reflect actual programs and their effects.

BC REVIEW: Urban forestry programs have produced beneficial results in areas determined by local authorities (or utility providers) as being most cost-beneficial. For example, where tree damages are likely to block high-traffic roads, heavily damage nearby property, or interfere with the services provided by critical infrastructure (e.g. electricity, telephones, drain and sewer services), then preventive urban forestry activities have clearly been beneficial. By promoting these types of programs, numerous local residents and programs can more effectively identify the most promising locations and activities where the needs for action greatly exceed the associated costs.

ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item is focused on the prevention of technological hazards involving infrastructure failure, whose causes include several natural hazards (such as severe winds and ice storms).

Objective 3.2: Promote floodplain management activities throughout Michigan, increase statewide participation in the National Flood Insurance Program, and ensure that the NFIP policy base accurately reflects the flood hazard threat in Michigan.

Implementation Method:

- Conduct Community Assistance Contacts (CACs) and Community Assistance Visits (CAVs) to promote the NFIP.
- Where feasible, promote participation in the NFIP (as a viable and prudent flood mitigation measure) in all MSP/EMHSD and MDEQ hazard mitigation guidance documents.
- Promote the NFIP at applicable governmental conferences and trade shows.
- Fully participate in all FEMA sponsored promotional events and activities for NFIP recruitment.
- Participation in Map Modernization activities and agency coordination around RiskMap efforts.

Committee Priority: HIGH (Ongoing)

Completion Target: 2016

Funding: EMPG, HMA, CAP, State Funding (General Fund)

Comments: 2014 status: This objective has had its priority increased from MEDIUM to HIGH. The activities identified in the Bullets above are important, ongoing implementation efforts. The MDEQ regularly conducts CACs and CAVs to promote the NFIP and floodplain management as part of its regular work plan under the federal CAP grant with FEMA. The MDEQ also regularly presents information on the NFIP at applicable conferences, training workshops, trade shows, etc. involving both flood hazard management professionals and elected officials. Both activities will continue to the extent possible. Both the MSP/EMHSD and MDEQ promote NFIP participation in their hazard mitigation guidance publications, and will continue to do so to the extent possible. The activity has become a part of FEMA-approved local hazard mitigation plans throughout Michigan. Progress on flood map updates has been substantial and widespread, through the Map Modernization program. Several state agencies regularly attend local meetings in support of the RiskMap program, to identify hazard vulnerabilities and brainstorm local hazard mitigation activities.

BC REVIEW: Compared with the annual damages caused by flooding each year, the costs of encouraging communities to participate in the NFIP are minor. In addition to making flood insurance available to residents throughout these communities, the NFIP encourages flood mitigation activities designed to reduce future losses. The NFIP also encourages improvements in various policies and practices, designed to increase the long-term safety and security of residents and communities. The costs associated with such improvements are also not primarily borne by just a few agencies or stakeholders, but are widely distributed among a great many public and private stakeholders, in a carefully calculated manner. Thus, the efforts and expense borne by any single participant in this network of stakeholders tends to be appropriate, from a cost-effectiveness standpoint.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item is focused on flood hazards.

Goal 4

Provide Leadership: Provide leadership, direction, coordination, guidance, and advocacy for hazard mitigation in Michigan.

Objective 4.1: Educate and inform local and state officials, political leaders, the public, and involved professional disciplines about hazard mitigation concepts, programs, processes, and considerations.

Implementation Method:

- Conduct educational seminars where feasible and appropriate.
- Develop, update, and distribute written guidance targeted to specific groups.
- Post relevant information on web pages of the MSP/EMHSD and other agencies.
- Update EMHSD Pub. 207: "Local Hazard Mitigation Planning Workbook."

Committee Priority: HIGH (Ongoing)

Completion Target: 2016

Funding: EMPG, HMA, State Funding (General Fund)

Comments: 2014 status: This objective has had its priority elevated from MEDIUM to HIGH. Ongoing activities include the distribution of guidance materials, handling inquiries with appropriate information, conducting training sessions in multiple locations throughout Michigan, and outreach to interested college and university classes related to urban and regional planning. EMHSD Pub. 207 provides detailed guidance to agencies that develop local hazard mitigation plans, and it needs to be updated to reflect changes in federal planning regulations.

BC REVIEW: This objective is met by distribution (or web-posting) information, by attendance and presentations at meetings and appropriate conferences, or by the submission of materials to newsletters, electronic networks, or targeted publications. All these options entail only low-to-moderate staff, preparation, and travel costs, and the selected approaches can be readily adjusted over time to suit the current staffing and budget situations of the implementing agency. Thus, the benefits of this effort are very likely to outweigh the costs involved.

ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item addresses the mitigation of a full range of natural, technological, and human-related hazards.

Objective 4.2: Promote better information flow on hazard mitigation among agencies, between levels of government, and between public and private entities.

Implementation Method:

- Invite other state agencies and private industry to share their concerns, expertise, and ideas with the MCCERCC.
- Regularly publicize the MCCERCC's activities and actions using all appropriate means.
- Promote greater overlap between state and local planning activities.

Committee Priority: HIGH

Completion Target: 2016

Funding: EMPG, HMA, State Funding (General Fund)

Comments: 2014 status: Ongoing activity. Presentations by outside agencies and organizations are included as a regular part of the MCCERCC meeting agenda. MCCERCC meeting notices, meeting notes, and associated reports are made available (via the MSP/EMHSD web site) to a wide array of public agencies and nongovernmental organizations. In addition to the MCCERCC, the primary focus of this objective will include its component agencies such as MSP/EMHSD, which monitors and encourages the development of local hazard mitigation plans throughout Michigan. Although the MHMP is informed by local hazard mitigation plans, steps have been taken with the 2011 and 2014 revisions of MHMP to structure the document so that its structure has more in common with local plans. The forthcoming revision of EMHSD Pub. 207 (see Objective 4.1) will encourage local plans to refer more explicitly to information and objectives in the MHMP.

BC REVIEW: The activities in this objective can be encompassed within current and ongoing staff duties, and therefore should not impose significant additional cost upon the involved agencies. Therefore, the benefits that should be gained from the specified activities can be seen as cost-effective.

ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item refers to the mitigation of a full range of natural, technological, and human-related hazards.

Objective 4.3: Continuously revise and enhance the Michigan Hazard Mitigation Plan (MHMP) to ensure it remains current, accurate, relevant, implementable, and in compliance with the federal Disaster Mitigation Act of 2000 and the Emergency Management Accreditation Program (EMAP).

Implementation Method:

- Revise the Michigan Hazard Analysis to address the appropriate revision period.
- Integrate relevant data and findings from completed local hazard mitigation plans into the Risk Assessment and other appropriate plan sections.
- As feasible, establish enhanced collection and analysis systems for the following types of data:
  - Loss estimations for all relevant state owned/operated facilities.
  - Structure counts in floodplains, with particular emphasis on commercial structures.
  - Use of satellite and aerial photographs (now readily available online) for risk assessment purposes.
- Develop the information management capacity to utilize the HAZUS-MH risk assessment tool or to match its capabilities through other means.

Committee Priority: HIGH

Completion Target: 2016

Funding: EMPG, HMA, State Funding (General Fund)

Comments: Earlier plan editions were approved as federal DMA 2000 compliant on March 29, 2005, March 27, 2008, and March 26, 2011. Plan revisions are required every three years in accordance with the state mitigation plan standards set forth in the federal DMA 2000. 2014 status: The newest MHMP revision benefited greatly from expanded technical analysis capabilities. Internal Geographic Information System enhancements and the expansion of online database and aerial photo archives have led to a substantial improvement in the capacity to analyze hazards. After the 2011 edition of the MHMP was completed, a substantial expansion of the Michigan Hazard Analysis was undertaken, with the assistance of multiple agencies and the MCCERCC. That update was completed and published separately in July 2012, but further revisions and expansion has again been completed for the March 2014 edition of the MHMP. MHMP remains an all-hazard document, and Michigan accreditation under EMAP was successfully obtained. Official EMAP compliance review is scheduled to occur during 2014 and 2015.

BC REVIEW: This objective is a normal part of the work of the MSP/EMHSD and MCCERCC and therefore does not entail any unusual expense for the state. However, since the MHMP is required for the receipt of numerous forms of federal disaster and hazard mitigation assistance, there is clearly a net benefit involved in accomplishing the task.

ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item refers to the mitigation of a full range of natural, technological, and human-related hazards.

Objective 4.4: Continuously monitor proposed legislation in Michigan for possible hazard mitigation opportunities and/or implications.

Implementation Method:

- Establish and maintain reporting relationships with state agency legislative liaisons so that mitigation-related aspects of proposed legislation are identified and reported to the MCCERCC.
- Establish and maintain a capability within the MSP/EMHSD to continuously monitor proposed legislation for hazard mitigation implications (using the key word notification mechanism of the Michigan Legislature web site or by other means).
- Establish and maintain reporting relationships with all applicable emergency management and first responder organizations so that mitigation aspects of proposed legislation are identified and reported to the MCCERCC.
- Establish liaison with the Michigan Legislative Service Bureau so that the following are identified and reported to the MCCERCC (to the extent possible): 1) mitigation-related aspects of legislation; and 2) the enactment, revision, and recession of Administrative Rules with mitigation implications.

Committee Priority: MEDIUM

Completion Target: 2019

Funding: EMPG, State Funding (General Fund)

Comments: 2014 Status: MSP now has dedicated staff who keep informed on legislation in Michigan, and initial contact was made by EMHSD staff to prepare for coordination on any forthcoming legislation that has emergency management implications, including hazard mitigation. Although this network link and its accompanying procedures still needs to be solidified, the effort has been bolstered by increased monitoring activities within EMHSD. These activities include extensive monitoring and internal distribution of media items related to MSP, expanded Public

Information Officer capacity for the agency, and expanded capabilities for the MIOC. In addition to MSP/EMHSD requests that fire service and other emergency management and first responder organizations make the MSP/EMHSD aware of any proposed legislation that has emergency management implications, internal procedures for sharing information between MIOC, PIO, hazard mitigation planning specialists, and other staff are being put into place. Ideally, all MCCERCC members would similarly expand and connect their own legislative monitoring capabilities to those of MSP/EMHSD, and vice versa. However, it takes time to establish and strengthen these links to become a part of standard operating procedure. The issue of legislation monitoring should be revisited on an annual basis to ensure that all relevant notifications to the MCCERCC are being made in a timely manner.
BC REVIEW: Since certain staff now dedicate more time to this activity, it is hoped that this objective could be accomplished primarily through the development of (de facto) standard operating procedures that increase the level of information and communication among existing staff and agencies that already work with legislative and hazard mitigation concerns, and that the costs of such progress would not be great. In view of the important impact that legislation can have statewide, either to mitigate or to (unknowingly) exacerbate hazard risks and impacts, there should be a clear net benefit to be derived from this effort.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: This item refers to the consideration of means to mitigation the impacts of a full range of natural, technological, and human-related hazards.

Objective 4.5: Develop protocols for soliciting private sector donations for hazard mitigation purposes.
Implementation Method:

- Work with the Michigan Department of Technology, Management and Budget (MDTMB) and Michigan Department of State Police (MSP) Management Services to determine the guidelines and parameters for such activities to ensure compliance with state laws, rules and regulations.
- If determined to be feasible and allowable, develop standard protocols for soliciting, accepting, expending, using, managing, reporting on, and accounting for donations (financial and/or in-kind).
- Institutionalize the protocols in the MCCERCC Bylaws to ensure their continued and consistent use.
- As required, develop standardized forms to be used in the conduct of all required transactions (or identify existing forms that can be used).
- Report on the use and final disposition of donations in the MCCERCC Annual Report of Activities document.

Committee Priority: MEDIUM
Completion Target: 2019
Funding: EMPG, State Funding (General Fund)
Comments: 2014 status: The priority for this objective has been lowered to MEDIUM, since limited progress has been made on this objective due to lack of staff and competing work priorities. This objective is still valid and will remain active for future implementation. This is a key building block for the future success of the MCCERCC when working with the private sector. It is important that a standard and consistent process be used when dealing with private sector entities, not only for appearances sake but also to ensure full compliance with applicable state laws, rules, regulations, and administrative / management mechanisms.
BC REVIEW: This objective would probably just involve the attention and coordination of personnel (possibly within multiple agencies) who have the expertise and time to investigate and compose recommendations on this matter. Since the may be significant additional revenues brought to bear to reduce hazard risks and vulnerabilities through this mechanism, the objective seems to be a highly cost-effective one to pursue.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: The general concept of hazard mitigation should be interpreted as including the consideration and alleviation of a full range of natural, technological, and human-related hazards.

~~**Objective 4.6: Evaluate flood damage to and caused by failure of sewage handling systems.**~~
Implementation Method:

- Convene a subcommittee of subject matter experts from applicable agencies to review this issue in recent flood events and develop solutions to identified problems.
- Implement the solutions where feasible.

Committee Priority: This objective has now been made a part of Objective 2.7.
Comments: The 409 Plan for Federal Disaster 774, October 1986, recommended creating a multi-disciplinary task force to evaluate this issue. This issue has surfaced in more recent flood disasters as well. 2014 status: Little progress

has been made on this objective due to lack of staff and competing work priorities. This objective is still valid and will remain active for future implementation, but has been shifted into Objective 2.7, where it should be made a part of ongoing flood mitigation activities.

Objective 4.7: Identify and formally recognize local, tribal, regional, state, or private projects and initiatives that have successfully incorporated hazard mitigation concepts and/or exemplify sound hazard vulnerability reduction strategies.

Implementation Method:

- ~~Identify and review mitigation projects and initiatives annually to determine those that may warrant formal recognition.~~
- MSP/EMHSD will maintain a "Best Practices" document that recognizes hazard mitigation activities in Michigan.

Committee Priority: HIGH

Completion Target: 2016

Funding: EMAP, State Funding (General Fund)

Comments: 2014 status: With regard to bullet 1, the MCCERCC had studied the feasibility of establishing a formal award program for excellent in hazard mitigation and decided that it would be better to team with the Michigan Emergency Management Association (MEMA) to recognize outstanding mitigation efforts through its established mitigation award program. Therefore, at this time there will not be a separate MCCERCC mitigation award program so this action item will be removed from further consideration. With regard to bullet 2, the MSP/EMHSD and the MCCERCC had successfully developed a new publication, "Hazard Mitigation Best Practices: Michigan Success Stories," which identified and recognized outstanding accomplishments in reducing loss of life, property and environmental damage associated with natural hazards in Michigan. This document, MSP/EMHSD Publication 106a (in recognition of its close tie to the MHMP – Publication 106), will be periodically updated. Bullet 2 remains a valid and ongoing action item.

BC REVIEW: The costs of this objective are fairly modest, entailing staff time and input from relevant agencies. Since the "Best Practices" document helps to promote and recognize hazard mitigation efforts, it is expected to result in a net benefit in terms of prompting additional hazard mitigation projects in the future.

ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: The general concept of hazard mitigation should be interpreted as including the consideration and alleviation of a full range of natural, technological, and human-related hazards.

Objective 4.8: Highlight cost savings and other benefits to taxpayers due to mitigation measures that helped reduce future disaster damages.

Implementation Method:

- Regularly write and publish mitigation "success stories / best practices" highlighting the benefits of completed mitigation projects at the state, tribal, and local levels.
- Post the success stories / best practices document on the MSP/EMHSD web site (MCCERCC web page) and submit them to FEMA V for inclusion on the FEMA mitigation web site, as appropriate.
- ~~Consider producing a compendium of Michigan mitigation success stories / best practices and distributing it to the widest array of stakeholders possible.~~
- Include mitigation success stories / best practices in other MCCERCC reports, as appropriate.
- ~~Include mitigation success stories / best practices on the CD produced under Objective 1.1 (statewide mitigation marketing and education campaign) to reach several key stakeholder groups.~~

Committee Priority: HIGH

Completion Target: 2016

Funding: HMA, EMPG, State Funding (General Fund)

Comments: 2014 status: The MSP/EMHSD completed an initial publication, which was made widely available in multiple formats, including online posting. Since this document will be updated in the future, this objective continues to be listed as HIGH priority, even though its initial tasks have been accomplished. Two of the bullets listed in previous MHMP editions have been removed, to reflect progress that has been made and to reflect the greater effectiveness and efficiency of internet posting (rather than CD distribution).

BC REVIEW: This objective may be implemented through a variety of communications media, each with different associated costs. The posting of content on the internet, or in e-mail messages to selected networks or agencies that

may help spread the information to others, has proven to be the cheapest method of distributing information, and therefore considered to be the most cost-effective. More expensive options include the use of broadcast media, the production and distribution of printed booklets and CD-ROMs, and having key spokespersons appear at conferences, public events, and in other newsworthy contexts. These are still used when appropriate opportunities are deemed beneficial. Due to the tertiary connection between this objective and the realization of demonstrated direct benefits (from hazard mitigation projects), the choice of promotional techniques usually favors the less expensive options, but all of these outreach activities also produce awareness and preparedness benefits, which add to their overall cost-effectiveness as an appropriate activity to promote.
ENVIR SOUND: Y, TECH FEASIBLE: Y, MULTI-HAZARD: The general concept of hazard mitigation should be interpreted as including the consideration and alleviation of a full range of natural, technological, and human-related hazards.